

## RESEARCH ARTICLE

# Biodiversity of mycoflora in mangroves habitat of Mumbri Creek of South Konkan, MS, India

Dekate HM and Baviskar RN

ICLES Motilal Jhunjunwala College, Vashi, Navi Mumbai, MS, India

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## ABSTRACT

The present investigation is carried out in Mumbri Creek of Sindhudurg district (Lat. 16° 21' N. Long. 73° 25' E). The main aim of this work is to find out the productivity of the Mumbri creek. This abstract consists of major mycoflora such as *Phycomycetes*, *Ascomycetes*, *Zygomycetes* and *Deuteromycetes*. The mycoflora help in making the wetlands highly nutritious which enhances commercially important resource organisms. Pneumatophores of *Avicennia marina* provide excellent media to grow the fungi on large scale. The *Deuteromycetes* were dominating group.

**Keywords:** Mycoflora, Mangrove, *Deuteromycetes*, Mumbri Creek.

## INTRODUCTION

The diversity and density of mycoflora associates with root surfaces of one major mangrove species in Mumbri creek, South Konkan, Maharashtra was studied during Jan.-Sept. 2015. The species recorded in the present investigation belonged to *Phycomycetes*, *Ascomycetes*, *Zygomycetes* and *Deuteromycetes*. The fungi were observed on one dominant mangrove species namely *Avicennia marina*, which harbours 11 genera and 16 species and some unidentified colonies. Among the species, *Aspergillus spp.* was most dominant species on the mangroves.

From the mycofloral point of view, tannin is an important secretion of mangrove that protects the protoplast against dessiccational decay which plays an important role in establishment of mycoflora. The tannin along with, entangled fine silt or sand particles, from a film around the roots in which spores and fungi germinate to establish mycoflora in this interesting microhabitat. The film seen as a nutrient broth or medium in which the fungi are trapped and grow luxurious developing colonies of different classes.

## MATERIALS AND METHODS

Regular fortnight samples of the pneumatophores of *Avicennia marina* were collected for a period during Jan.-Sept. 2015. The fungi were obtained by serial washing of roots following Harley and Waid (1955) method.

## RESULTS

In all genera, *Aspergillus spp.* was the dominating genus with highest average percentage to be followed by *Curvularia*. The percentage distribution was *Deuteromycetes* (40.22), *Zygomycetes* (13.88), *Phycomycetes* (17.0), *Ascomycetes* (25.77) unidentified colonies (3.13). *Chaetomium olivaceum* (Ascomycetes) was the percentage wise lowest species. The class percentage of fungi was low in monsoon compared to pre monsoon and post monsoon periods. The maximum number of species was recorded in the months of October to March, while minimum in July and August. The observed variation in density can be attributed to extreme hydrological condition like heavy rainfall, high velocity of water currents, flooding and mechanical stress due to wind and water currents that prevent formation and stability of slime film formation around roots. In the case of *Avicennia marina*, 12 genera and 17 species and some unidentified colonies were recorded of mycofloral diversity (Dekate, 2011). Among the fungal class, *Deuteromycetes* was dominating over the other three and *Aspergillus* was the most abundant species.

But due to less rainfall this year, growth of fungal flora has changed slightly. Now only 11 genera and 16 species have been identified in the study area. Due to change of season this year the luxuriant growth in mycoflora has been affected. *Aspergillus niger* or *A. niger* is a fungus and one of the most common species of the genus *Aspergillus*. It causes a disease called fruit scab on certain fruits and vegetables such as grapes, onions and peanuts and is a common

contaminant of food (Baviskar and Suryawanshi, 2013).

**Table 1: List of fungal species**

1)	Phycomycetes
a)	<i>Absidia ramose</i>
b)	<i>Rhizopus nigricans</i>
c)	<i>Syncephalastrum olivacum</i>
2)	Ascomycetes
a)	<i>Emericella nidulans</i>
b)	<i>Cirrenalia tropicalis</i>
3)	Deutromycetes
a)	<i>Aspergillus fumigatus</i>
b)	<i>A. nidulans</i>
c)	<i>A. niger</i>
d)	<i>A. terreus</i>
e)	<i>A. flavus</i>
f)	<i>Cladosporium oxysporum</i>
g)	<i>Curvularia oryzae</i>
h)	<i>C. tuberculata</i>
i)	<i>Fusarium oxysporium</i>
j)	<i>Penicillium nigricans</i>
4)	Zygomycetes
a)	<i>Mucor racemosus</i>
5)	Unidentified colonies

**Table 2: Check list of fungi species isolated from the mangroves.**

Sr. No.	<i>Avicennia marina</i>
01	<i>Absidia ramose</i>
02	<i>Mucor racemosus</i>
03	<i>Rhizopus nigricans</i>
04	<i>Syncephalastrum olivacum</i>
05	<i>Aspergillus fumigatus</i>
06	<i>A. nidulans</i>
07	<i>A. niger</i>
08	<i>A. terreus</i>
09	<i>A. flavus</i>
10	<i>Cladosporium oxysporum</i>
11	<i>Curvularia oryzae</i>
12	<i>C. tuberculata</i>
13	<i>Emericella nidulans</i>
14	<i>Fusarium oxysporium</i>
15	<i>Penicillium nigricans</i>
16	<i>Cirrenalia tropicalis</i>
17	Unidentified colonies

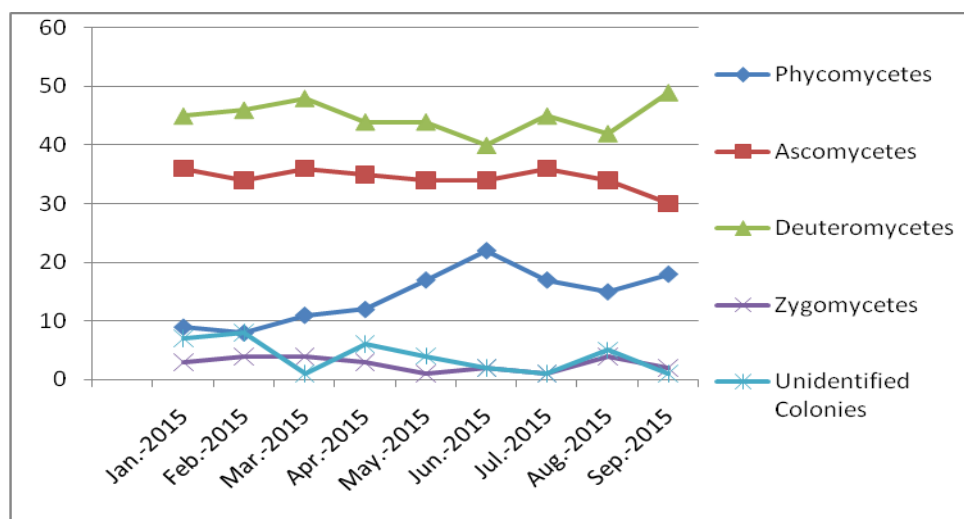


Fig.1: Percente composition of fungal classes isolated from *Avicennia marina*.

*Aspergillus fumigatus* is a fungus of the genus *Aspergillus*, a saprotroph widespread in nature, is typically found in soil and decaying organic matter, such as compost heaps, where it plays an essential role in carbon and nitrogen recycling.

## CONCLUSION

Patole (2009) has recorded that the stilt roots are better for the abundant growth of mycoflora than for the pneumatophores of *Avicennia* species. The stilt or prop roots also differentiate that the inner roots show more fungi than those in the outer peripheral region because of comparatively more humidity on the inner side. The humidity is directly proportional to both qualitative as well as quantitative growth of fungi. Babu (1999) noticed that the mycofloral growth is affected in monsoon than in any other season. In monsoon, due to the breaking of the waves on the root surfaces, the freshly developed film gets washed out thus inhibiting the multiplication of mycoflora. Parkinson (1967) described the root surface fungi of rhizoplane fungi. Untawale et al. (1973) have investigated rhizoplane fungi of certain plants and also those colonizing inter-tidal region of the mangrove swamps.

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